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ABSTRACT

The failures of instructional technology to meet the expectations of the society cannot be attributed to the inadequacies of the field alone. Although educational technology has promised more than it has delivered and has expected more from the schools than it reasonably should have, the threatening social conditions of America must be considered in evaluating the failure of oureducational technological hopes. In general, the failure is a result of the lack of an integrated system of social goals and objectives. What exactly is instructional technology supposed to do? To answer this question generates more penetrating questions int the ambiguous areas of sociology, American values, modern psychological theory, and eventually into media theory. It is here, in media theory, where we begin to find, via McLuhan, an explanation of the systematic relationships that exist in media: we can see the need for the systems concept based on a sense of mission. The future of instructional technology is in the development, promulgation, and application of the systems concept. We have learned from our mistakes and are now ready to proceed into successful instructional technology. (MC)

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A CURRENT VIEW OF THE FUTURE OF THEORY AND RESEARCH IN EDUCATIONAL COMMUNICATION

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By

Charles F. Hoban

When Jerry Torkelson called me and asked if I would speak on the topic of the future of theory and research in educational communication, media, and technology, I felt highly flattered, but didn't listen carefully. Consequently, I failed to say, "No, thank you." I am not good at the quick uptake on "No" and thereby get stuck later with what B. F. Skinner calls "the contingencies."

Regarding the subject of the future of almost anything, I am at a loss. I find it increasingly difficult to understand the troublesome present, much less tomorrow, the day after, or the fascinating year of 2000 A.D.

Nonetheless, I am committed to a scheduled presentation, in a time slot of 75 minutes. Parkinson's Law is inviolable.

I will say some of the things that I think ought to be said, some of which others and I have said before with negligible "contingencies." In our Brave New World of B.S. (Behavioral Science), I am not sure that hoping is admissible. Since I have only a peripheral relationship to B.S. (Behavioral Science), I feel few of its philosophic constraints in hoping for the best.

I have given little thought to the B.O. (Behavioral Objectives) of this presentation. As we all know, B.O. (Behavioral Objectives) derive directly from B.S. (Behavioral Science), and share with it the virtue of ~~economy~~ parsimony and the lack of sufficiency.

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On second thought, I realize that I have two related behavioral objectives, both of which are in the area of survival. First, my presence and activity here make me professionally visible to others, with its implication that I am still among the living. Second, I hope to positively reinforce those in the audience who are on the same wave length as I am, and to make a slight dent in the armor of those with opposing views. I realize I have violated the prescribed rules of syntax in these formulations, but I will leave the task of proper formulation to the rule-makers -- involving them, so to speak.

If you are still with me, -- and I am aware of the possibility that I may have tramped on tender toes rather than titillated an ironic sense of humor -- I will here and now specify the general orientation of this presentation. Within the available time limits, I will deal with educational communication, media, and technology within their broad social context, and will try to indicate some of the implications of this social context.

The Social Context

The uncomfortable fact is that the mood of America is edgy and uncertain. We have lost confidence in the leadership of our social institutions -- our corporations and conglomerates, our mass media, our government at all levels, our labor unions, our churches, and our schools.

Closer to home, I think that Richard Hooper, in his highly perceptive and well-written "Diagnosis of Failure" of instructional technology in the United States, published in the Fall, 1969, issue of AVCR, was correct in much of what he said about the problems of instructional technology. However, he may have zeroed in too precisely on instructional technology without taking into account the general state

of the nation, the failures of leadership in most of our institutions, not just in instructional technology, and the conditions of the schools, particularly but not limited to our great urban centers.

Obviously, we in educational communication, media, and technology have created some of our own mistakes; but, almost without exception, our mistakes are of the same kind that have afflicted our other social institutions and our population in general.

Some insight into underlying dynamics of our social condition was provided by Herbert Gans, a sociologist of the activist school, in his article on "The American Malaise." (New York Times Magazine, ,) Gans argues that the gap between our expectations and our aspirations is closing rapidly, while at the same time our achievements have fallen far below both. This polarization is dangerous, and requires major readjustments in our views of our worlds and of ourselves.

The relationship of aspiration-expectation-achievement to the field of instructional communication, media, and technology is self-evident. The unmistakable fact is that we have promised more than we have delivered; but, in fairness, it must also be said as a fact that we have delivered more than we have been given credit for.

There is evidently a growing awareness of the probability that we have expected too much of our schools, that education has become a secular religion of individual and social salvation. The same has been true of instructional technology.

Now, let us take a brief look at another area of the social context which has flowed into them from the environmental surround. Both in urban centers and in their lily-white suburbs, the juvenile gang problem has grown to outrageous proportions. And the drug problem has descended to the elementary schools. The violence of the community has entered the playgrounds and hallways of our schools. School children are robbed of their lunch money by other school children. Police patrol the streets around the schools and the hallways within them. Students are

mugged, stabbed, beaten, and raped, and attacks on teachers have become a daily ritual in some of our large cities. And with the great urban spread, there seems to be no place of escape, no refuge from the fear of lawlessness and disorder.

The point here is that learning in school is likely to be diminished by fear of loss of property and of violent bodily harm, including death. As long as these threatening conditions exist in or in association with our schools, the effectiveness of even the very best of our educational communication, media, and technology is likely to be considerably reduced. Worse yet, we have no effective technology for dealing with our social ills. Or perhaps we have, in the ~~single~~ simple concept of a coalition of the schools, universities, churches, police and fire departments, and such active community groups as the Lions Clubs, and such like, in a united effort to improve our communities. Obviously, we in education can no longer afford our social isolation and detachment in theory, research, or daily operations.

This thought leads to a look at our university-school relations, since many of us here are affiliated with colleges and universities and many others with school systems.

We lack an integrated and unified educational system and our inter-institutional relationships are not good. I can say that from personal experience in both school systems and universities, but to generalize beyond personal experience, I refer to the Ford Fourdation's report on the more than 30 million dollars it invested between 1960 and 1970 in a variety of efforts to improve education. The title of the report is A Foundation Goes to School, published in 1972. Among the conclusions set forth in this report, several stand out:

(1) Schools and universities have little capacity for respecting or understanding each other.

(2) Universities' knowledge is not as useful or readily available as many hope or expect.

(3) Universities often lack defensible proposals for educational innovation.

(4) The question about the university's relations with schools is not so much lack of university competence as lack of sufficient commitment and the general value system prevailing at universities. Academic and financial credit goes to faculty members who publish research and promote new ideas, rather than to those who demonstrate changes in the real-world settings.

(5) Academics who serve as consultants to schools in innovative programs gain added status by increasing the number of their consulting commitments rather than by maintaining fewer commitments and meeting them better.

If I correctly read what is said in A Foundation Goes to School, then by inference, the future of theory and research in educational communication, media, and technology, generated by university faculty members, will continue to have little immediate relevance or effect on schools' efforts to improve their programs -- and, I may add, to the universities' efforts either. Unless, of course, both the universities and the school modify their value systems. We have much work ahead to build an educational system of mutuality of interests and support. What we have now is simply a feeder system.

Theories of Socialization Functions of Schools

Now let us turn to educational sociology and some of the research and ideas for change that have come out of it. James S. Coleman and Christopher Jencks, both of whom are sociologists who have done extensive research on schooling, are in agreement that very little in the way of traditional academic achievement, and subsequent economic equality, can be attributed to any identifiable instructional

treatment, instructional aids or devices, or clusters of teacher attributes. Instead, they contend that the principal determinant of achievement in today's school and afterward is the social class of the family which generates and nurtures the student.

It follows from this theory of social class determinism that, within the present curricular structure of the school, instructional technology plays little part in improving instructional effectiveness. It also follows that basic changes must be made in concepts and procedures of the socializing functions of the schools. Coleman maintains that the school should not shield its students from society, as it now does, but should gradually move them into it. To do so, he suggests a much greater involvement of the school in the community and the world of work, and a reduction in the purely symbolic experience the school has traditionally provided simply because nothing else did. With the communications revolution and the total prevalence of radio and television, the need of the schools to provide large quantities of symbolic experience no longer exists. The job of the school is now to provide what is missing in the lives of children and adolescents -- work experience and community involvement. So contends Coleman, and I agree.

In his most recent study on Inequality, Jencks elaborately documents the relationship of schooling to income in adulthood. He believes, as do at least some of the rest of us, that the schools cannot in themselves equalize economic opportunity or income when other institutions and factors operate against them. He contends that (1) school life should be viewed as an end in itself, not merely a means to an end, and (2) school achievement should be judged on the important and often unmeasurable qualities that touch the lives of their students. He reminds us that one of the major criteria for assessing the worth of schools is how well they succeed in making life as satisfactory as they can for their students. Student satisfaction remains

to be defined and criteria of desirability formulated, but the goal of student satisfaction cannot easily be ignored. If no one else has made this clear, then the students themselves most certainly have.

This is a radical departure from the traditional view of the functions of the school and, I may add, a refreshing one.

At this point, it is appropriate to recall John Gardner's little book on Excellence, published 12 years ago. It is too rich, as are the reports of Coleman and Jencks, to summarize here, but several of his points can be selected to refresh our recollection:

(1) The school is only one of many educational institutions of our society.

(2) The tone of our society needs continuing self-renewal in all its aspects, not simply in one or two of its institutions or agencies.

(3) Equality is an ambivalent value in our society. None of us is quite satisfied to be equal to everybody else. We like to think of ourselves as being better than at least some others.

(4) The talent appropriate to our society is wide in range, and much of it is not academic.

(5) While extreme excellence in talent and performance is rare in any field of endeavor, trying for excellence is essential to our self-renewal and it should be rewarded.

Implicit if not actually explicit in Gardner's view of the criteria of excellence is that of how well a person does his job and how hard he tries, not how high in a hierarchy of social status and prestige is the class of his occuption.

Here, I cannot resist the temptation to quote one of Gardner's prose gems:

> An excellent plumber is infinitely more admirable than an incompetent philosopher. The society which scorns excellence in plumbing because

> plumbing is a humble activity and tolerates shoddiness in philosophy because it is an exalted activity will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water. (p. 102)

Values

This leads me to my favorite topic of values. More and more people are beginning to express the belief that one of the most important functions of our educational program is the cultivation of values, but not too many are too clear as to what values are especially in need of cultivation. Not so, Jerome Kagan, however. He says:

> I want to see schools begin to serve the needs of society. Ancient Sparta needed warriors, Athens needed a sense of the hero, the ancient Hebrews needed knowledge of the Testament, nineteenth-century Americans needed managers and technicians -- and the schools responded beautifully in each case by providing the kind of people the society needed. What do we need now? I believe we need to restore faith, honesty, humanity. And I am suggesting in deep seriousness that we must, in the school, begin to reward these traits as the Spartans rewarded physical fitness. I want children rank-ordered on the basis of humanism as we rank-order on the basis of reading and mathematics. I'm dead serious. When I was a kid, deportment was always a grade. In a funny way, I want that, but instead of deportment I want him graded on humanism: How kind is he? How nurturant is he?
>
> Every society must sort its children according to the traits it values. We will never get away from that. A society needs a set of people whom it can trust in and give responsibility to for the management of its capital and resources, for the health of its people, the legal prerogatives of its

> people, the wars of its people. The function of the school system is in fact to prepare this class. (Saturday Review of Education, April, 1973, p. 42.)

Kagan can not be more serious about this than I am, and than I think all the people in this audience also should be. In the opening discussion dealing with the social context of our schools, I strongly implied the need for a restoration of the values of faith, trust, and humanity, the last of which I would make interchangeable with caring about others, helping others, and a heroic life of compassion toward those in need. This is the very opposite of the Rat Race, the juvenile gang, ruthless competition, and detachment from our neighbors.

So, in our concern with educational communication, media, and technology, we have another goal dimension -- the traits we value and need for survival and fulfillment as a nation.

And here is as good a place as any to quote and take to heart one of Bruner's latest statements:

> We are living, I believe, in a time of deep revolutionary change. Tinkering with details of school organization without making room for a means of absorbing the wider revolution in our ways of educating is surely unworthy of us as a species. (Saturday Review of Education, March, 1973, p. 24.)

Psychological Theories of the Nature of Man Make a Difference

So far, we have dealt largely with educational theory advanced by sociologists. Now let us turn to psychological theories. They, too, make a difference in the means and ends for which we use our educational technology.

Probably the most influential of American psychologists is B. F. Skinner. Skinner enjoys a rightfully great reputation, not necessarily because of his philosophical view of the plastic nature of man, the selectivity of the environment,

and what he ambitiously calls a technology of behavior, but possible for other reasons. First, he is a gifted persuasive writer, and gifted writers are admired. Second, because many of the things he says and illustrates so adroitly fit in with and illuminate our own experience and insights. And, third, to a limited degree, and in some situations, and with some people, some of his hypotheses seem to work.

However, many people including me, reject two of his major postures: (1) the destruction of the Inner Man, and (2) the Big-Brother-is-Watching aspect of his technology of behavior, the latter because it contains the seeds of excellent training for life in a totalitarian society. From Skinner has sprung programmed instruction, individually prescribed instruction, and an epidemic of insistence on the statement of educational (instructional) objectives in behavioral terms of performance. Already, Big Brother is watching in some schools, even to the extent of TV monitors in the recreation room, candy there for good conduct, and "Stop that!" over the voice channel for messing around. Also, there is the moral question of whether students should be rewarded materially for doing what they ought to be doing anyway, the very doing of which may be expected to improve the quality of their lives. Obviously, Skinner's philosophy and its application require very searching examination, and continuing surveillance, and it's about time we started to do exactly that, instead of acting like a low fidelity playback system.

It is my unequivocal belief that, without heavy compensation of engagement in group and team activity and interaction, and in community involvement, individualized instruction, which is being shouted from the housetops as The New Revelation, can be antisocial both in its latent intent and in its manifest consequences.

Man is a social being and must be trained as such. This is not to say that there is not room for individualization of instruction, self-pacing, or performance up to full potential. But what we don't need today is more rampant individualism, with its inherent self-centeredness, and its total disdain for others and for the well-being of society.

Back to the psychologists, Piaget presents a different view of the nature of man. He vitalizes the Inner Man with his built-in sequence of developmental stages, and insists that environmental information must be acted upon, transformed, and internalized by the Inner Man. He is opposed to the copy theory of perception, and insists that even the highest levels of intellectual activity have a sensory-motor pattern of operation. While the pragmatic American reader may get lost in Piaget's inferences made from inferences made from inferences, and transformations of transformations of transformations, there is much in Piaget that has direct bearing on instructional technology, particularly his doctrine of perception as a process of acting-on information. Piaget lays at rest the popular but wrong-headed notion of passivity in media experience.

And so on with other psychologists, few of whom, incidently, are at their best when applying theories to the practical realities of education in the raw.

Theories of Communication, Media, and Technology

Before coming to the direct subject of this talk, which I have carefully saved for the end when time is running out and extreme brevity is thereby a necessity, I will comment briefly on theory. Physical and biological scientists and engineers I have talked with are in agreement that (1) the content of theory is concepts not empirical evidence, and (2) the composition and arrangement of these concepts is fluid, subject to change. They draw no fine lines between theories and hypotheses, and even when it comes to empirically derived laws, they admit of more than one interpretation or explanation. So we have plenty of leaway in the area of theory as far as its nature is concerned.

Communication is just beginning to emerge as an academic "discipline" and so far lacks a fully-developed, comprehensive theory. There is not even full agreement

on definition. What theoretical work has been done is fragmented, specialized, and topical.

Three major hypotheses, advanced largely for mass communication are:

(1) The hypodermic-needle hypothesis: messages enter directly into the bloodstream of cognition, affection, and conduct. When we use such terms as "target audience," "impact," etc., we are using the language of this hypothesis.

(2) The reinforcement hypothesis: messages reinforce existing tendencies or structures of our three domains and initiate patterns of behavior only if no prior pattern exists.

(3) The cultivation hypothesis: messages and message systems cultivate our priorities, our values, our patterns of perception and expectation, and our very grounds of reality.

Of the three, I prefer the last, which has been advanced by George Gerbner. It requires further explication and verification, but its current value is in its comprehensiveness. In education (instruction), I think we must choose between the hypodermic-needle hypothesis which is all too prevalent, and the cultivation hypothesis, which all have greatly neglected. The latter is more productive and consistent with views already set forth above. It provides for continuity, cumulation, and tender care, all of which are essential in education and educational communication. The future hope of developments in educational communication lies in the further development of the cultivation hypothesis into a fullblown theory which, over time, can be tested empirically, and explicated more fully so as to lend itself to practical applicability.

Some question may arise as to why I used mass communication hypotheses in discussing educational communication. The fact is that most of the media that we use in the classroom and training sessions have one of the basic characteristics of

mass communication pointed out by Raymond Williams, the British Cultural historian; to wit: a low ratio of sources to receivers. All our textbooks, workbooks, standardized tests, motion pictures, film strips, computer managed instruction, etc., fit this mass communication ratio concept. They are prepared by the relatively few for use by the many. The relatively few sources of our instructional materials are remote and relatively untouchable. They have no real contact with their audience and have few, if any, effective feedback channels. So, like it or not, our commercially prepared materials of instruction meet at least one major and crucial criteria of mass communication. I don't contend that this is necessarily bad or irredeemably undesirable. I simply content that it is so, and should be recognized for what it is.

Developments may also lie in the depth of explorations of kinesics (body language), which lends itself to popularization only by superficiality. Much of body language is subtle, and requires long training to decode. And as Ray Birdwhistell has pointed out, it is not context-free but context-bound.

A few words of caution must be advanced regarding interpersonal communication. First, let us celebrate the requiem of the myth of the generation gap. There has been in the natural course of events over many, many generations, some kind of gap between generations. But the generation gap has been blown out of proportion. The teenagers who ran off to Haight-Ashbury and the communes with the false light of freedom in their eyes are returning in their 20's, older and wiser, to hearth and home and the deep roots of identity and support found in the family.

Another word. Beware of "sensitivity" programs and their variants. They may relieve shyness and uptightness, but they also carry the danger of serious psychic damage. But my greatest objection to "sensitivity" training is that it destroys the last bastion of privacy -- the privacy of the self.

A third word of warning is against interpersonal communication played as a game. Perhaps in many instances it may be, but it should not and need not be, if the arguments presented in this paper are actualized. Intrinsic in game theory is the concept of an enemy who must be done in and who will do his utmost to do you in. I have actually known people who have internalized game theory in these terms. I consider such internalization a personal and social tragedy. So -- a word of advice. Avoid the concept of interpersonal communication within this kind of context of game theory. When valid de facto, as too often it is, it is a horrible concept.

Media Theory

One of the major difficulties with media theory is that (a) there are so many media, and (b) in real life, various media are used in combination, i.e., we live in a multimedia world. For example, a major change came about in films about 45 years ago with the addition of sound. To instructional films was added voice narration, and audio-visual education was born. Today, the pride and joy of the New Instructional Film is the narrationless film. In place of voice narration, which generally carries the film's conceptual content, we now have a musical sound track, i.e., a second medium, expressive of mood and emotion and capable of carrying its own structured message. Frankly, we know very little systematically about music as a medium of communication. So, from a theoretical point of view, we really don't know what we are doing with our new -- sometimes lovely and sometimes godawful -- narrationless films. To this single pervasive example may be added many others. This one was just for openers.

To meet the requirements of theory, any theory of media must "explain" all media with the same set of concepts. The one scholar who has come closest to meeting this requirement is our old friend, Marshall McLuhan. McLuhan has entered the language and been accepted in most areas of American enterprise, but in the field of instruc-

tional media, the response to him has been of the worse kind -- indifference. I think the response of indifference is stupid, but so be it.

McLuhan's theory of media can be reduced to three basic propositions or constructs:

(1) Each medium carries its own inherent message with long range psychic effects.

(2) Sensory limitation of input information from any one medium is completed by internal arousal of complementary sensory responses, and

(3) The audience participates subjectively in message formulation and becomes co-source or co-author in its transformational and complementary participation.

While I would not discourage efforts to develop systematic theoretical foundations of individual media, I don't think current efforts hold great promise of operational usefulness in the immediately foreseeable future. I am far from certain that outcomes of such specialized media developments along theoretical lines will combine compatably into a unified multimedia theory, which is what we need in education and instruction.

The more promising future developments seem, at this time, to be along the trail pioneered by McLuhan. His is not the last word, but the first.

Theory of Technology

Technology is not a theory but a cultural fact. This is why I have suggested elsewhere that the justification of instructional technology is primarily aesthetic, i.e., instructional technology is in harmony with our technological culture, for better or worse.

There is a popular and widespread concept of the application of instructional technology. Unfortunately, it seems to consist of throwing a lot of expensive instructional hardware at the schools, in the expectation that the engineering sophis-

tication of the hardware will somehow be transformed into sophisticated solutions to complex and difficult problems of education. At best, this concept is deformed wishful thinking.

Unfortunately, we are still at the throw-hardware-at-the-schools stage, despite the sparsely populated learning centers we have constructed, the under-utilized studios we have built and equipped, and the closets full of unused equipment and materials.

Much of this -- not all, but much -- is due to failure to recognize Bob Heinich's simple truth that the basic paradigm of technology, including instructional technology, is the systems concept. I know that many of us are sick of the term "systems concept," but this is because of misuse and abuse, which there are mountains of.

Application of the systems concept involves at least three phases, anywhere and anyplace:

(1) System analysis and design, which is primarily an analytical process;
(2) System development, which is accomplished through the tedious and demanding process of research and development; and
(3) System management, which is primarily an administrative task and inevitably done very badly in institutional education from behind the well-guarded desks of the principal, the superintendent, or the vice-president for academic affairs.

As I see it, the future of instructional technology is not in hardware per se. The engineers are quite capable of meeting any of our present and future hardware needs. Instead, the future is in the development and promulgation of understanding and application of the systems concept.

Those engaged in instructional design are making a good beginning in this direction, but it is only a beginning. And there are only a relatively few engaged actively in instructional design. And, for the most part, these relatively few seem to be located in the Middle West and in the professional schools.

They will tell you, as does David M. Smith in his forthcoming book on systems engineering and management, that the most difficult task in the systems approach is determining the mission that the system is designed to accomplish. Mission determination is pretty much what I have been talking to or around in this paper.

Research

The outlines of future directions of research in educational communication, media, and technology are implicit in the broad problems and theories that I have briefly discussed from the beginning. The implications involve major reorientation of the schools to meet society's needs of this part of this century, and the necessity of broadening the concepts and concerns of educational technologists.

Research in the future, as in the present, requires a broader spectrum of methodology and techniques beyond the experimental and the quantitative, important as both of these are.

We need, in fact, to begin at the beginning of the research process, with extensive observation of what is actually happening in the schools and in school related activities. This cannot be done adequately in the library or by sitting on our behinds in our offices or around conference tables. It can only be done where the action is.

We need much more and much deeper conceptual analyses of our technologies, both in their formative and in their operational stages. As of today, many of our "innovations" are based on ad hoc conceptual chaos, and that's why so many of them fail.

We need to seek out systematic malfunctions and dysfunctions and their sources in our instructional systems, as well as the anticipated excellence of the systems we are researching. The whole truth is rarely sought and more rarely told.

We need to return to Rene Descartes' procedural doubt as a point of departure and as a continuing state of mind, so as to avoid the well known effects of experimenter expectation of foreordained results. The Null Hypothesis needs to be taken seriously.

I could go on and on -- as could any of us here -- but everything I would say can be reduced to imperative needs for greater awareness, greater realism, greater versatility, greater inventiveness, greater risk-taking, and greater truth-telling in educational research. And in the name of all that is holy, let us jetison our jargon.

Jack Edling has set a precedent for a needed fresh approach in his use of the case study method. Instructional designers are carving out the path in the much needed methodology of systematic research and development. Bob Heinich has set an example for the effective use of the conceptual-analytical research approach. Edward Palmer, of the Children's Television Workshop, has revived techniques for analysis of stimulus patterns in relation to focus of children's attention under instruction.

The necessary new breed of researchers and various diverse patterns of research strategies are here, and they both seem to be doing well, thank you. The hope of the future is very much in their hands, and may their tribe increase for only when they have done their work can we expect experimental research to take over and rigorously produce more than obscure trivia.

Postscript

As to our future in educational communication, media, and technology, it is pretty much what we are willing to take on and make of it. If we don't, be assured that somebody else will. And also be assured that these somebodies will repeat most of our mistakes before learning that they have already been made, and no replication is required.

Our advantage is that we have learned at least something from our mistakes, and are now ready for the re-cycling and renewal process.

Thank you, and blessings.

* End *